Ptilocercus lowi continentis, subsp. n.

Very similar to true Bornean *lowi*, but distinguished by the following characters:—Colour above drab-grey, that of *lowi*, so far as can be seen on rather faded specimens, more tinged with isabella. Underside soiled creamy, fairly sharply defined from the grey sides. Dark eye-mark more extended anteriorly, reaching nearly to the tip of the muzzle. Hands pale buffy above, as in *lowi*, but feet with the metatarsals dark brown, contrasting markedly with the buffy toes. Fine hairs of "naked" part of tail shorter and more sparsely scattered than in *lowi*; proximal half-inch of the plume black, remainder white.

Skull of about the same length as in *lowi*, but the muzzle and palate markedly narrower; the breadth of the muzzle above i^2 is 6·0 mm. in two adult *lowi*, 5·1 in the type of *continentis*; distance between outer corners of m^2 12·1 mm. in *lowi*, 11 in *continentis*.

Dimensions of the type (measured in the flesh):—

Head and body 133 mm.; tail 167; hind foot 26·5; ear 17.

Skull: condylo-basal length 37·3; greatest breadth 22·5; interorbital breadth 8·5; brain-case breadth 15; palatal length 17·7; length of upper tooth-series 17·6.

Hab. 10 miles from Kuala Lumpur, Selangor.

Type. Adult male. B.M. no. 10. 4. 17. 1. Presented by the Selangor Museum. Obtained 22nd December, 1903, by a Museum collector.

"Caught in a nest made of leaves and fibre in a tunnel 2 feet long in a hollow branch of a tree."

LXIII.—*Some Remarks on the Teleostean Caudal Fin.* By Richard H. Whitehouse, M.Sc., University of Birmingham.

In a recent number * of this journal Mr. C. Tate Regan contributed an interesting paper on the caudal fin of some Teleostean fishes, and in the course of his remarks he refers to a recent paper of mine † which gave a summary of somewhat extensive observations on caudal fins in fishes. Mr. Regan says "the caudal fin skeleton of the Clupeidæ differs

* April 1910, p. 354.

† Proc. Royal Soc. B. lxxxii. p. 139.

from that of the Elopidæ in that the last two centra have aborted, and the anterior uroneural is ankylosed with the actual last centrum (corresponding to the third last of the Elopidæ)." The same author says further:—"I have already mentioned Mr. Whitehouse's paper on the caudal fin of fishes, and I have shown that the element which he terms 'urostyle' in *Clupea* is formed by one or more displaced posterior neural arches or 'uroneurals'; the homocercal caudal fin should not then be defined by the presence of a urostyle formed by the fusion of upturned vertebræ, but by the modification of posterior neural arches into uroneurals which functionally replace and so lead to the suppression of the centra of the upturned vertebræ."

From the latter quotation the reader might be inclined to suppose that the ankylosis of a "uroneural" with one of the terminal vertebræ constitutes what I called a urostyle; and for this reason it will be necessary for me to emphasize that I consider a urostyle to be the result of a fusion of vertebral centra only, and that anything of the nature of neural arches does not at all enter into the formation of a urostyle. In the case of *Clupea* I do not think "that the last two centra have aborted," but that several centra which once formed the upturned portion of the vertebral column have become united and have formed a single rod-like bone or urostyle. A reference to the figure of Mr. E. T. Newton, F.R.S.*, shows that in the young *Clupea sprattus* the upturned part of the axis consists of distinct centra which later on lose their individuality and fuse together to form a urostyle. Moreover, in *Clupea*, the neural arches of the centra which have formed the urostyle still persist in the form of a triangular bone resting upon the urostyle.

I do not consider the persistence of posterior neural arches in the form of "uroneurals" as functionally replacing the centra of the upturned vertebræ, but rather that they persist in order to still carry out their function of protecting the spinal cord, which seems always to extend to the distal end of the last hypural, even when the actual vertebral column terminates at the proximal end of the terminal hypural bones.

With reference to the caudal fin of *Fierasfer*, Mr. Regan finds it impossible to regard it as gephyrocercal, apparently for the reason that the rays which may be considered to constitute the caudal fin are not supported by radials, as the dorsal and anal fins are. The same author considers the

* 'Journal of the Quekett Micros. Club,' 1882, ser. ii. vol. i. p. 79.

following to be essential to gephyrocercy: "the posterior part of the tail to have aborted and the interval between the dorsal and anal to have become bridged across by a secondary formation of rays, inserted on basalia and derived from the dorsal and anal fins." Now the caudal fin of *Fierasfer dentatus* fulfils all these conditions except that the rays are not inserted on basalia; this latter condition is one which I have not seen insisted on before; moreover, Ryder quotes *Fierasfer* as illustrating his definition of gephyrocercy, and such eminent authorities as Professors L. Dollo * and B. Dean † consider this form typically gephyrocercal.

According to Mr. Regan's description of the caudal fin of *Genypterus*, viz. that it possesses two expanded hypurals, this form is undoubtedly homocercal. Since this is so, it is fairly safe to conclude that in the larval stages this fin passes through a heterocercal stage; but *Fierasfer* has no hypurals, and according to all records that have been available to me there is no evidence of a heterocercal stage during development. Again, the caudal fin of *Genypterus*, being supported by hypurals, is morphologically a ventral fin, while that of *Fierasfer* is shared by dorsal and ventral rays, and a gap remains between the two halves. For these reasons we are scarcely justified, I think, in considering the caudal fin of *Fierasfer* to be in a "condition somewhat more specialized than in *Genypterus*," which implies that they are to be considered in the same category; on the contrary, it appears to me that *Fierasfer* has a typically gephyrocercal and *Genypterus* a homocercal caudal fin.

LXIV.—*A Preliminary Note on the* Alciopinæ, Tomopteridæ, *and* Typhloscolecidæ *from the Atlantic adjacent to Ireland.*

By R. Southern, B.Sc., Irish National Museum, Dublin.

The collection of Polychæta made by the Scientific Staff of the Fisheries Branch of the Department of Agriculture and Technical Instruction for Ireland contains a number of species belonging to the above pelagic families. With the exception of the two species *Tomopteris helgolandica* and *T. septentrionalis*, none of them has hitherto been recorded from the British Marine Area. The list of species is as follows:—

* 'Sur la Phylogénie des Dipneustes,' 1895.
† 'Journal of Morphology,' 1894, p. 102.